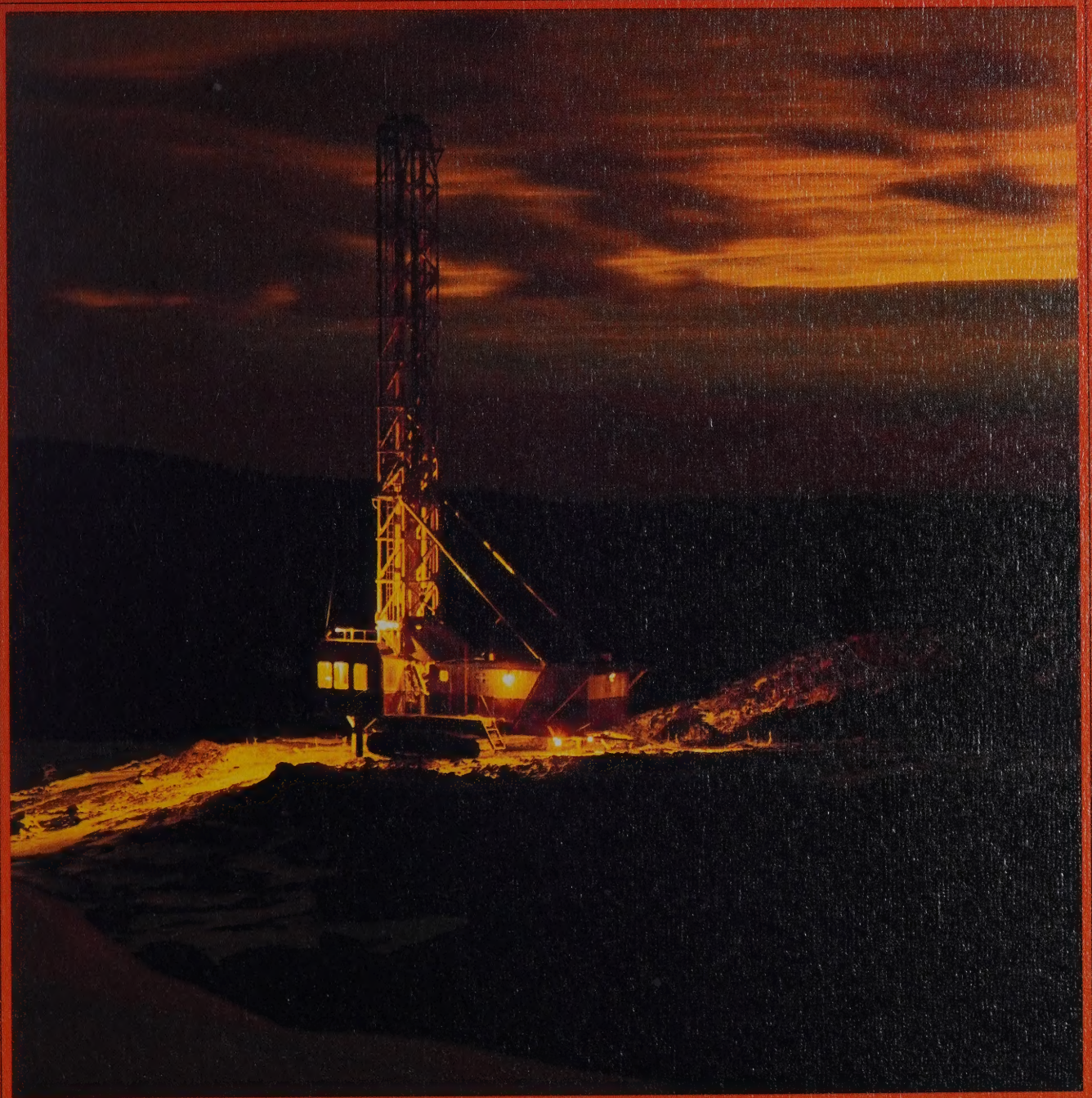


Placer Development Limited Annual Report 1977





## Directors

James C. Dudley, New York, U.S.A.  
*Private Financial Consultant.*

<sup>1,2</sup>Ross G. Duthie, Vancouver, Canada,  
*President and Chief Executive Officer.*

E. Jack Eldridge, Sydney, Australia,  
*Vice-President, Australasian Operations.*

Albert E. Gazzard, Vancouver, Canada,  
*Director.*

William James, Toronto, Canada,  
*Executive Vice-President,*  
*Noranda Mines Limited.*

<sup>1</sup>Thomas H. McClelland, Vancouver, Canada,  
*Chairman of the Board.*

<sup>1</sup>Alfred Powis, Toronto, Canada,  
*President and Chief Executive Officer,*  
*Noranda Mines Limited.*

<sup>2</sup>J. Ernest Richardson, Vancouver, Canada,  
*Chairman,* <sup>4</sup>*MacMillan Bloedel Limited.*

<sup>2</sup>P. Ritchie Sandwell, Vancouver, Canada,  
*Chairman of the Board and*  
*Chief Executive Officer,*

<sup>3</sup>*Sandwell & Company Limited.*

Vernon F. Taylor, Jr., Denver, U.S.A.,  
*President, Westhoma Oil Company.*

<sup>1,2</sup>H. Richard Whittall, Vancouver, Canada,  
*Deputy Managing Partner,*  
*Richardson Securities of Canada.*

<sup>1</sup>*Member of the Executive Committee*

<sup>2</sup>*Member of the Audit Committee*

<sup>3</sup>*Consulting Engineers*

<sup>4</sup>*Forest Products Company*

## Director Emeritus

John D. Simpson, Vancouver, Canada

## The Company

Placer is a Canadian company, incorporated in the Province of British Columbia, whose business is primarily exploration, development and production of hard minerals, petroleum and natural gas. Canadians hold 78.2% of the issued shares, 12.1% are held in Australasia and 9.7% are held in the United States and other countries.

## Officers

Thomas H. McClelland, *Chairman of the Board*

Ross G. Duthie, *President and*  
*Chief Executive Officer*

James L. McPherson, *Senior Vice-President*

Lawrence Adie, *Vice-President,*  
*Exploration*

John A. Butterfield, *Vice-President,*  
*Marketing*

James H. Eastman, *Vice-President,*  
*Project Developments*

E. Jack Eldridge, *Vice-President,*  
*Australasian Operations*

John M. McConville, *Vice-President,*  
*Administration and General Counsel*

Anthony J. Petrina, *Vice-President,*  
*Operations*

Donald Hallam, *Secretary*

John Racich, *Treasurer*

Howard F. Gougeon, *Comptroller*

David Michaelis, *Sydney Secretary*

## Annual General Meeting

The Annual General Meeting of Shareholders of the Company will be held on Wednesday, May 3, 1978 at 12:00 Noon in the Vancouver Island Room at the Hotel Vancouver, Vancouver, British Columbia, Canada.

## Valuation Day Price

On December 22, 1971, established as valuation day by the Canadian Department of National Revenue, the price of the Company's Common Shares was \$12.75 per share (adjusted from \$25.50 following the share split in 1973).

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## Comparative Highlights

	1977	1976
Sales .....	\$177,100,000	\$114,875,000
Equity in after-tax earnings of associated companies .....	\$ 6,240,000	\$ 11,088,000
Net earnings .....	\$ 20,753,000	\$ 17,960,000
— per share .....	\$ 1.72	\$ 1.49
Working capital .....	\$ 69,834,000	\$ 72,209,000
Exploration expense .....	\$ 9,916,000	\$ 6,436,000
Properties and development expenditures .....	\$ 14,680,000	\$ 479,000
Buildings and equipment additions .....	\$ 7,568,000	\$ 4,721,000
Common shares outstanding .....	12,086,342	12,064,004
Number of shareholders .....	5,196	5,337
Number of employees .....	2,640	2,652

### Net earnings before and after extraordinary items (in thousands of dollars)

	Before	After
1968	7,412	8,471
1969	11,754	11,754
1970	11,762	11,762
1971	7,095	7,095
1972	12,547	16,649
1973	59,070	71,812
1974	39,609	43,143
1975	9,768	16,285
1976	17,960	17,960
1977	20,753	20,753

## Directors' Report to the Shareholders

Your Directors are pleased to present the 52nd Annual Report.

### Financial

Consolidated net earnings for the year ended December 31, 1977 were \$20,753,000 or \$1.72 per share compared to \$17,960,000 or \$1.49 per share in 1976. Consolidated net earnings in 1976 included a non-recurring credit of \$3,040,000 resulting from a reduction in Philippine withholding tax on Marcopper dividends.

Molybdenum was the chief contributor to the Company's earnings. Demand was strong through the year and the international price, which is set primarily by the United States market, increased approximately 15%.

Copper, the Company's other principal product, continued for the third successive year to be underpriced and in serious over-supply.

Sales of metal concentrates are generally in United States dollars and the high value of that currency relative to the Canadian dollar through most of 1977 was beneficial to the Company.

A total of \$9,661,000 was paid in quarterly dividends amounting to 80¢ per share for the year. Placer's policy is to use its earnings to provide for both a return to shareholders and the growth of the Company through exploration and acquisition. The Company remains in a sound financial position with working capital at the end of 1977 of \$69,834,000 (1976 - \$72,209,000).

Placer and its Canadian subsidiary companies file a consolidated return under the Anti-Inflation Act and have complied with the provisions of that Act although in 1977 the lower value of the Canadian dollar versus the United States dollar gave rise to excess revenue, as defined by the Act. The Anti-Inflation Board has accepted the Company's compliance plan to eliminate the excess revenue. The Canadian Government has announced that controls will end on December 31, 1978.


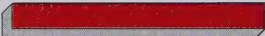





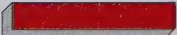


To be ready for growth opportunities by acquisition or development of new properties your Company has arranged firm lines of credit in Canada and the United States. The strong financial position of the Company has made it possible to obtain these lines of credit at very competitive rates.

### Acquisitions

Purchase of all of the shares of Canadian Export Gas & Oil Ltd. was completed in July at the offered price of \$6.45 per share and at a total cost of \$53,808,000. The \$50,000,000 borrowed from two Canadian banks for this purpose was reduced later in 1977 to U.S. \$30,000,000 to be repaid over a term of five years commencing in 1978. Placer's existing oil and gas operations have been consolidated with those of Canadian Export under a new company named Placer CEGO Petroleum Limited with staff and offices in Calgary, Alberta. Detailed information on Placer CEGO's earnings and operations may be found in the *Review of 1977* section.

In furthering its expansion into energy-related minerals,

### Return on shareholders' equity (percentage)

1968		9.76
1969		12.84
1970		12.17
1971		7.09
1972		15.64
1973		50.89
1974		23.37
1975		8.14
1976		8.74
1977		9.62



Placer purchased two surface coal mining companies in northeastern Kentucky, U.S.A. in February, 1978. The cost of the acquisition, which is being financed by term loans from two United States banks, was approximately U.S. \$10,000,000. Production is presently 400,000 tons per year of steam coal with a low to medium sulphur content, and estimated reserves on existing leases are 15,000,000 tons. Coal will be delivered to industrial and utility markets along the Ohio River system utilizing a coal dock and barge loading facility which were included in the transaction.

### 1977 — An Unimpressive Year for Mining

The weak climate for investment in Canadian mining has persisted for a number of years. A year ago your Directors noted that as 1977 began, there appeared to be some recognition by federal and provincial governments of a relationship between their policies, particularly in the field of taxation, and the lack of growth in Canada's mineral industry. Since then, meetings have been held by the two levels of government to consider ways of encouraging the Canadian mining industry and the climate for investment seems to be improving.

### Marketing

Molybdenum, the only metal to contribute significantly to Placer's earnings, experienced an improvement in demand and price during the year. Both copper and zinc suffered from large surpluses in world markets which restricted any tendency for their prices to rise to more favourable levels. Consumption of copper increased at a rate sufficient to provide some encouragement, but zinc consumption grew less rapidly due to the discontinuance of certain of this metal's traditional uses in automobile manufacture and reduced activity in the construction industry.

The economies of Canada's major trading partners are expected to continue their recoveries from the recession and 1978 should see the strong molybdenum market maintained although no significant change is anticipated for either copper or zinc.

### Operations

Canex Placer Limited, the Company's wholly owned exploration and production subsidiary in Canada, was voluntarily wound-up and its assets distributed to Placer in January, 1978. This step will benefit the Company in taxation and administration areas. Placer will now carry out directly all former activities of Canex including exploration in Canada and production of molybdenum at the Endako mine.

Craigmont, which has been an important member of the Placer group of companies since it commenced operations in 1961, is nearing exhaustion of its ore reserves and anticipates the completion of mining in the early part of 1979.

The Gibraltar mine operated at a loss as a result of the poor copper price. There is a possibility that the mine may not be able to develop ore to continue its operations beyond 1979 unless there is a price improvement. Studies of alternative methods, such as hydraulic removal of the overburden at lower cost, are in progress.

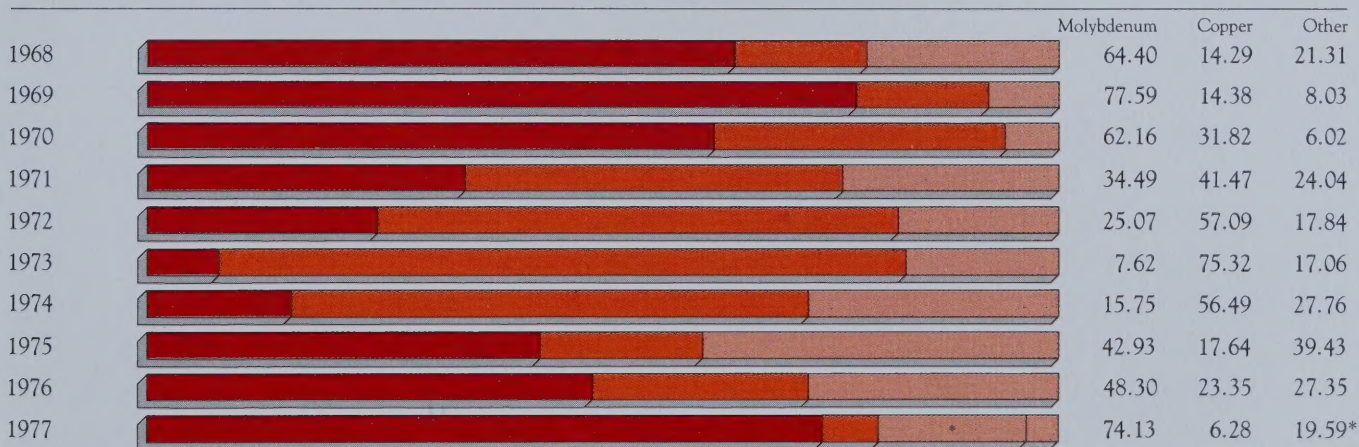
### Exploration

The search for new mineral occurrences through joint ventures, exploration agreements and field programmes is essential to ensure Placer's future mineral resources. Exploration expense amounted to \$9,916,000 (1976 — \$6,436,000) and was distributed as follows: Canada 42%, United States 28%, Australasia 15%, and other countries 15%. In addition, oil and gas lease acquisition and drilling expenditures of \$14,680,000 were capitalized. These were primarily incurred in Canada.

### Officers

A number of senior appointments were made during the year. As previously reported J.D. Little resigned as a Director and Executive Vice-President. J.L. McPherson, formerly Vice-President, Finance and Administration, was appointed Senior Vice-President and continues as chief financial officer. J.M. McConville, formerly Secretary and General Counsel, was appointed Vice-President, Administration and General Counsel. J.A. Butterfield, formerly Director of

Contribution to earnings by product (per cent)



\*Oil and Gas 16.24%



Marketing, was appointed Vice-President, Marketing. D. Hallam, formerly Assistant Secretary, was appointed Secretary.

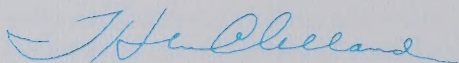
### Personnel

A total of 2,640 (1976 — 2,652) persons was employed by Placer and its subsidiary and associated companies at December 31. Of these, a total of 207 (1976 — 212) was directly employed by Placer at an annual wage and benefits cost of \$5,241,000 (1976 — \$5,040,000).

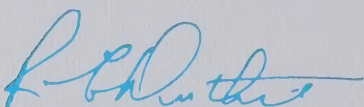
### Outlook

Placer continues to direct attention to energy-related minerals in the expectation that these minerals will become even more important in the future. A slow recovery in the major industrial economies has been under way for approximately two years and is expected to continue through 1978. This should result in improved markets for your Company's products.

On behalf of the Board of Directors,













T. H. McClelland, Chairman



R. G. Duthie, President

Vancouver, B.C.  
March 17, 1978

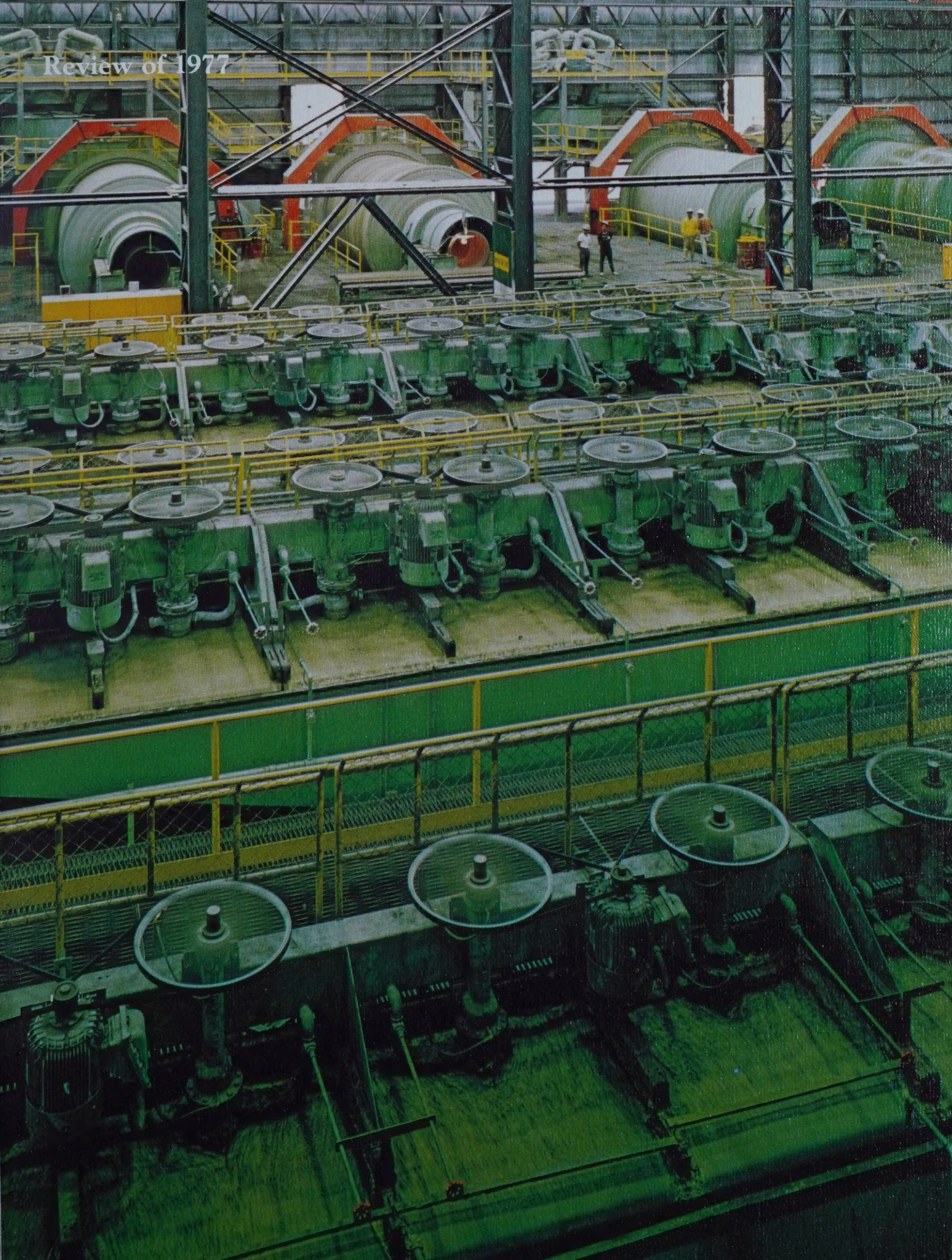
### Ten year tax expense (in thousands of dollars)\*

		Provincial	Federal	Others
1968		853	52	724
1969		1,815	999	703
1970		2,820	4,221	3,261
1971		1,437	744	3,008
1972		2,285	1,410	2,707
1973		10,151	4,011	4,517
1974		9,912	8,688	7,289
1975		8,475	3,286	2,767
1976		7,137	4,499	2,268
1977		13,282	7,153	1,876

\*Consolidated companies only.



Review of 1977





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## Markets

### General

The moderate recovery of Western Bloc economies continued in 1977. Demand for most commodities increased, but in some instances was not sufficient to reduce stockpiles accumulated during the recession or to affect prices. Molybdenum was a notable exception.

Moderate economic growth should continue in 1978, but unless capital spending increases significantly, demand for some metals will remain insufficient to absorb supply.

### Copper

Western Bloc consumption of refined copper increased about 7% to 7,560,000 tons, which was approximately in balance with production. Large inventories held at the beginning of the year remained essentially unchanged through 1977 and, indeed, would have increased had strikes and production cuts not occurred in the United States copper industry. Under the influence of these inventories the price remained at a low yearly average of U.S. 59.4¢ per pound.

A further increase in demand of 5-10% is anticipated in 1978 and a modest reduction in surplus stocks may occur, permitting some improvement in price.

### Molybdenum

Although less steel was produced in most industrial countries, the demand for molybdenum increased owing to an expanding range of uses for this metal in the steel industry. Other applications for molybdenum, such as in lubricants and catalysts, are contributing to the growth. These trends, together with demand from Eastern Bloc countries, helped the market to remain firm through the year and the overseas (Europe and Japan) price for molybdic oxide increased from U.S. \$4.00 per pound C.I.F. Overseas Foreign Port at the beginning of 1977 to U.S. \$4.60 in August. A strong market is expected to continue through most of 1978.

### Zinc

An improving trend in zinc consumption was dampened by the auto industry's increased use of lighter weight materials, and by lagging capital investment which adversely affected demand for galvanized steel. Thus, the existing surplus remained and stocks on commodity exchanges increased. Prices were under pressure almost constantly through the year, and the European producer price declined from U.S. 36¢ per pound at the beginning of 1977 to U.S. 27¢ at year-end. In February, 1978 the price was further reduced to

U.S. 25¢ per pound. Below-capacity operation of many smelters seems likely to continue.

### Mercury

Demand in most countries increased slightly and Western Bloc consumption now appears to be moderately higher than production. The market, however, continues to be under pressure because of large stocks which have accumulated over several years. The price was variable in 1977, reaching a peak of U.S. \$175.00 per 76-pound flask during March, but then declining under selling pressure to a low of U.S. \$105.00 in July. Prices in 1978 are not expected to reach a level at which most producers will be able to cover costs.

### Gold

After taking into account the International Monetary Fund's releases and sales by Russia to generate foreign exchange, the supply of gold was in close balance with demand. The price tended to increase primarily because of fears about inflation and international currency instability. Future gold production is forecast to decline leading to a long-term upward trend in price.

### Coal

The oil embargo of 1973 has had two major effects on world energy production. First, higher oil prices resulted in price increases for all energy materials; second, political pressure increased for less reliance on oil imports from the Middle East and for development of internal domestic energy sources.

In most industrial countries the effect of these conditions has been to increase both the demand and the price of thermal coal. In the United States, with consumption in 1977 of 500 million tons, thermal coal is currently selling at U.S. \$20.00-23.00 per ton.

The market for metallurgical coal remains weak because of the depressed demand for steel, particularly in Japan. Two to three years may be required to reduce stocks to normal levels. Prices for metallurgical coal range from U.S. \$36.00-65.00 per ton, depending on quality.

### Oil and Gas




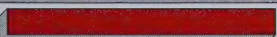
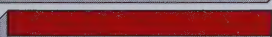
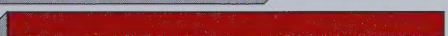
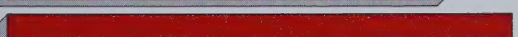
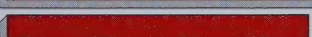

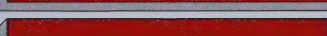
There is a short term surplus of oil with some African and other heavy crude oils being sold at discounts of 20¢ to 30¢ per barrel. The current posted Middle East price is equivalent to U.S. \$14.50 per barrel delivered in New York. The



Canadian price of \$11.75 at Edmonton, is expected to increase in June, 1978 and in January, 1979. The higher prices have encouraged increased drilling activity in Canada.

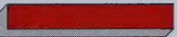

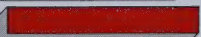
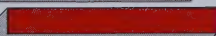
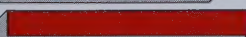
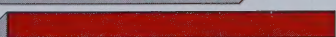
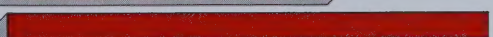
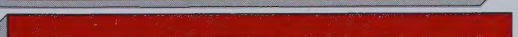
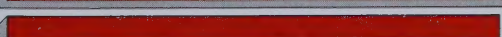
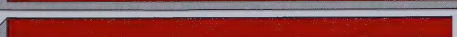
The supply of natural gas in North America is more than adequate for current needs. The price is set at 85% of the oil price on a BTU basis, delivered Toronto equivalent. The current domestic price at the Alberta border is \$1.34 per million BTU and the export price is U.S. \$2.16 at Emerson, Manitoba.

#### Yearly average copper prices per lb.\* (in U.S. cents)

1968		56.21
1969		66.24
1970		64.12
1971		49.25
1972		48.79
1973		80.75
1974		93.39
1975		55.99
1976		63.54
1977		59.35


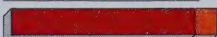

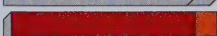
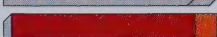




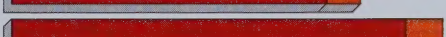
\*L.M.E. cash settlement wirebar

#### Yearly average zinc prices per lb.\* (in U.S. cents)

1968		12.22
1969		12.97
1970		13.91
1971		15.49
1972		17.73
1973		24.00
1974		35.29
1975		36.89
1976		36.06
1977		32.40

\*European producer price

#### Yearly average molybdenum prices per lb.\* (U.S. dollars)

		Sulphide	Oxide
1968		1.62	1.82
1969		1.72	1.92
1970		1.72	1.92
1971		1.72	1.92
1972		1.72	1.92
1973		1.72	1.92
1974		2.02	2.23
1975		2.48	2.74
1976		2.93	3.24
1977		3.68	4.02

\*Published major producer price f.o.b. mine



## Exploration

### Hard Minerals

In western Canada a major effort continued on the Howard's Pass lead/zinc project on the Yukon-Northwest Territories border. The 1977 programme comprised 16,600 feet of diamond drilling and construction of a 50-mile access road the completion of which is anticipated in early 1978. The programme was funded by U.S. Steel which is continuing its option to earn a 49% interest in the property. Within the area of mutual interest a tungsten prospect has also been located and drilling programmes will be carried out on both the lead/zinc and tungsten projects during the 1978 field season.

Geological and geophysical surveys and limited diamond drilling were carried out in the Restigouche-Murray Brook area in New Brunswick. Geological and radiometric surveys, shallow drilling and bulk sampling were conducted on two areas of low-grade uranium mineralization in Quebec.

Activities were expanded within the United States emphasizing coal acquisitions and exploration for lead, zinc and precious metals. Large-scale exploration programmes were conducted in Arkansas and Alaska. Drilling programmes were continued at gold properties in Nevada and Montana. Engineering and marketing studies and test drilling were continued on the Beluga coal deposit in Alaska.

Placer's joint venture in Mexico has been terminated as it was not possible to reach an agreement with the partners on development of the Real de Angeles property. The joint-venture company, Explomin S.A. is in the process of liquidation.

In Australia a drilling programme is continuing on a metallurgical coal property at Wolgan, New South Wales. A base metal exploration programme focussed primarily on tin and tungsten prospects throughout Australasia.

### Oil and Gas

Placer CEGO participated in 26 exploratory wells, resulting in 10 gas discoveries and five oil discoveries. Among them were:

CEGO Huber Bigoray, 14-26-51-9W5 in the West Pembina area of Alberta which was flow tested at 2,878 barrels of oil per day. The Company's interest in the discovery acreage is 12.5% and 21.25% in the northwest offset section.

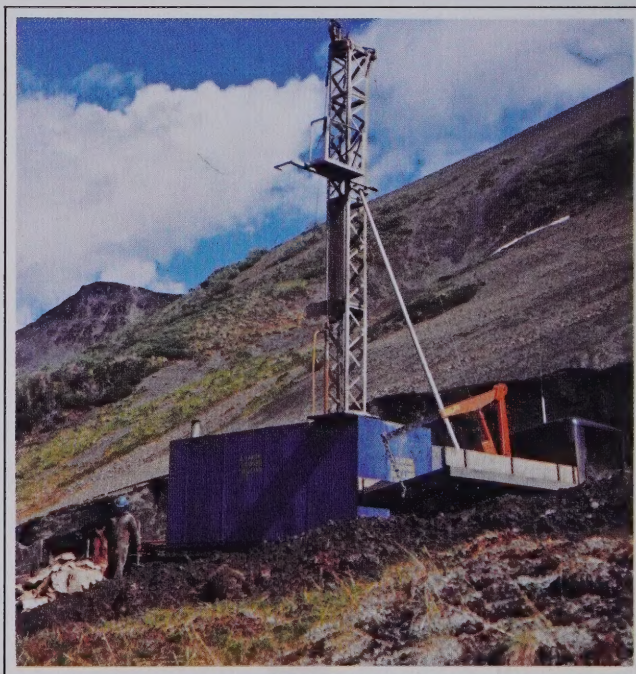
Chevron et al Medlod, 16-16-52-21W5 in the Medicine Lodge area of Alberta, was completed at a rate of 31 million cubic feet of gas per day with some condensate. The Company's interest in the well and the 7,360-acre block around it,

is 21.4275%. A second confirmation well was commenced 3¼ miles southwest of the discovery. Gas from this field has been contracted for and deliveries are to commence before November 1, 1980.

Placer's entire oil and gas interests have been integrated with Placer CEGO and include a 50% interest in 7,040 acres in the West Eagle area near Fort St. John, British Columbia. A significant oil discovery had been made in this field in late 1976 by Placer and during 1977, Placer CEGO successfully completed 10 development oil wells. Production increased as a result, from 81 barrels to 950 barrels per day.

New development wells, including those in the West Eagle field, numbered 36, of which 20 were completed as oil wells and 11 as gas.

Placer CEGO participated in the drilling of a well in Block 21/2 in the North Sea which encountered gas in the Cretaceous formation. The Company's interest in the well is 6.25%. It is planned to drill North Sea 21/2-5 to the Jurassic formation if partner approval can be obtained.





## Operations

### CANADA

#### Endako Mines Division (100% interest)

Earnings by Endako reflected the strong market and improved prices of molybdenum in 1977. The mine, near Fraser Lake in British Columbia, operated at capacity, producing 15,223,000 pounds of molybdenum in concentrate and converting this to molybdic oxide through roasting.

Development of ore proceeded with the removal of 3,028,000 tons of overburden. Increased haulage distances and additional pit equipment required an expansion of repair facilities. A new, 100-ton ore truck was added to the fleet which now numbers 19 units.

#### Endako

	Years ended December 31,	
	1977	1976
<b>FINANCIAL</b>		
Gross revenues .....	\$78,065,000	\$49,433,000
Income and resource taxes* ..	\$15,800,000	\$ 7,255,000
Net earnings .....	\$18,548,000	\$ 8,517,000
<b>OPERATIONS</b>		
Ore milled — tons .....	10,014,000	9,392,000
Daily average — tons .....	29,100	26,600
Grade — % Mo S <sub>2</sub> .....	0.161	0.163
Recovery of molybdenum		
— % .....	78.80	81.90
Contained molybdenum		
produced — lbs. ....	15,223,000	15,076,000
purchased — lbs. ....	321,000	—
Contained molybdenum		
shipped — lbs. ....	17,283,000	14,940,000
Inventory at year-end		
— lbs. ....	2,968,000	4,721,000
tons = short dry tons		

\*Reduced by depletion credits arising from exploration expenses incurred by Canex Placer Limited.

An 18-day strike by employees who are members of the Canadian Association of Industrial, Mechanical and Allied Workers, ended on January 23, 1977 with the signing of a two-year collective agreement effective to December 31, 1978.

Estimated mineable ore reserves at December 31 were 232,000,000 tons at an average grade of 0.137% molybdenum disulphide and a cut-off grade of 0.08% molybdenum disulphide.



#### Placer CEGO Petroleum Limited (100% interest)

Placer CEGO's year-end estimated share in reserves before royalty deductions was as follows:

	Proven <sup>1</sup>	Probable <sup>2</sup>	Total
Crude oil (barrels)	6,467,000	4,414,000	10,881,000
Natural gas (mmcf)	141,000	39,000	180,000
Natural gas liquids (barrels)	1,552,000	32,000	1,584,000
Sulphur (long tons)	244,000	28,000	272,000

<sup>1</sup>Proven reserves are considered to be those reserves which to a high degree of certainty are recoverable at commercial rates under present depletion methods and operating conditions, and current prices and costs.

<sup>2</sup>Probable crude oil reserves are considered to be those reserves commercially recoverable as a result of the beneficial effects which may be derived from the future institution of some form of enhanced recovery scheme or as a result of the more favourable performance of the existing recovery mechanism than that which could be deemed to be proven at this time.

From a gross acreage total of 2,942,000, Placer CEGO's net total of land holdings at December 31 was 907,000 acres.



**Placer CEGO**

Year ended  
December 31,  
1977

**FINANCIAL\***

Gross revenues .....	\$15,021,000
Income taxes .....	\$ 2,484,000
Net earnings** .....	\$ 2,991,000

**OPERATIONS\***

Oil and natural gas liquids produced — bbls.	796,200
Natural gas produced — mcf .....	10,500,000

\*Includes the results of Canadian Export Gas & Oil Ltd. and Canex Placer Limited's oil and gas operations for the period January 1 to August 31, 1977.

\*\*Net of amortization of excess consideration paid over underlying book value of net assets acquired.

**Gibraltar Mines Limited (71.9% interest)**

The depressed price of copper resulted in a loss of \$142,000. The mine, near Williams Lake, British Columbia, was able to pay dividends amounting to 50¢ per share from the earnings of prior years when the copper price was at a higher level.

The Granite Lake, Stage I pit was mined until September when it was replaced by the Pollyanna, Stage I pit. The mining plan calls for production from this ore zone until the third quarter of 1979 when the transfer of operations to the Gibraltar East, Stage II pit is scheduled to begin. The current price of copper, however, does not provide sufficient funds to remove the 12,000,000 tons of overburden required to develop this ore and management is carefully reviewing alternative and possibly more efficient methods of preparing the Stage II pit for mining.

Estimates of mineralized reserves on December 31 at a cut-off grade of 0.25% copper, were 286,000,000 tons at an average grade of 0.37% copper.

**Gibraltar**

Years ended December 31,  
1977                      1976\*

**FINANCIAL**

Gross revenues .....	\$41,247,000	\$27,537,000
Income and resource taxes ...	\$ (227,000)	\$ 419,000
Net earnings (loss) .....	\$ (142,000)	\$ 943,000
Dividends paid .....	\$ 5,706,000	\$ 1,712,000

**OPERATIONS**

Ore milled — tons .....	14,071,000	8,457,000
Daily average — tons .....	38,800	35,900
Grade — % copper .....	0.38	0.45
Recovery of copper — % ..	82.06	83.55
Concentrate produced		
— tons .....	154,500	122,400
Copper in concentrate		
— lbs. ....	86,782,000	63,703,000
Copper concentrate shipped — tons .....	159,400	112,200
Inventory at year-end		
— tons .....	16,700	20,600

tons = short dry tons

\*Reflects a 19-week strike.

The improved price of molybdenum justifies recovery of this by-product only when the grade is at an economic level. Production of molybdenum in concentrate amounted to 311,000 pounds.

Negotiations for a new collective agreement commenced in early February, 1978.

**Craigmont Mines Limited (44.59% interest)**

Earnings declined due to adverse copper markets and fewer shipments of concentrate. A reduction in the average grade of ore milled was also a factor.

Production from the underground mine decreased as the number of production headings declined. Concentrator throughput was maintained with the addition of low-grade material from surface stockpiles.

**Craigmont**

Years ended October 31,  
1977                      1976

**FINANCIAL**

Gross revenues .....	\$19,916,000	\$24,309,000
Income and resource taxes ...	\$ 2,233,000	\$ 3,884,000
Net earnings .....	\$ 2,359,000	\$ 3,919,000
Dividends paid .....	\$ 4,062,000	\$ 4,062,000

**OPERATIONS**

Ore milled — tons .....	2,050,000	1,946,000
Daily average — tons .....	5,600	5,400
Grade — % copper .....	1.17	1.35
Recovery of copper — % ..	94.65	96.34
Concentrate produced		
— tons .....	81,000	88,200
Copper in concentrate		
— lbs. ....	45,315,000	50,565,000
Iron concentrate produced		
— tons .....	42,200	58,700
Copper concentrate shipped		
— tons .....	70,300	94,000
Inventory at year-end		
— tons .....	15,400	5,600

tons = short dry tons

At the commencement of operations near Merritt, British Columbia in 1961, the mine was estimated to have a life of 15 to 20 years. Craigmont is now scheduled to extract the last of its ore reserves and will cease mining operations in the first quarter of 1979. The provincial government, the community and employees have been kept informed of the situation. Compensation plans exist to assist employees in relocating and a number will be employed at other mines in British Columbia.

Exploration for additional ore reserves adjacent to the mine's original orebodies was resumed in July with no significant results to date. Other exploration programmes were continued through the year, particularly in the Shuswap Lake region of the province.

**Mattagami Lake Mines Limited (N.P.L.) (27.12% interest)**

Earnings declined as a result of poor prices for zinc and copper. Despite low prices, production at the mine, located



**Mattagami**Years ended December 31,  
1977 1976**FINANCIAL**

Gross revenues	\$ 96,010,000	\$ 96,804,000
Income and mining taxes	\$ 12,451,000	\$ 19,835,000
Consolidated net earnings	\$ 11,648,000	\$ 14,985,000
Dividends paid	\$ 11,909,000	\$ 13,244,000

**OPERATIONS — MATTAGAMI**

Ore milled — tons	1,043,200	1,225,900
Daily average — tons	2,858	3,350
Grade — % zinc	6.6	7.3
Recovery of zinc — %	92.1	91.6
Grade — % copper	0.52	0.55
Recovery of copper — %	76.2	73.8

Zinc concentrate produced — tons	119,600	154,900
Zinc in concentrate — lbs.	127,515,000	163,251,000
Copper concentrate Produced — tons	17,000	20,500
Copper in concentrate — lbs.	8,290,000	9,940,000

**OPERATIONS — MATTAGAMI REFINING INC.**

Zinc produced — tons	155,500	125,800
Cadmium produced — lbs.	928,200	341,300
Sulphuric acid produced — tons	189,400	118,200

**OPERATIONS — MATTAGBI**

Ore milled — tons	1,030,100	1,065,700
Daily average — tons	2,822	2,912
Grade — % zinc	8.4	8.1
Recovery of zinc — %	89.0	87.3
Grade — % copper	1.01	1.23
Recovery of copper — %	86.6	83.2

Zinc concentrate produced — tons	140,300	139,100
Zinc in concentrate — lbs.	152,370,000	151,225,000
Copper concentrate produced — tons	34,100	41,600
Copper in concentrate — lbs.	17,987,000	21,799,000

tons = short dry tons

near Matagami, Quebec, was close to plan. Proven ore reserves at year-end were 8,595,000 tons at an average grade of 7.2% zinc, 0.58% copper, 0.015 oz. gold and 0.9 oz. silver per ton.

Operating costs at the Mattabi mine near Sturgeon Lake, Ontario (60% owned by Mattagami) declined toward the end of 1977 due to the completion of a waste rock removal programme initiated in 1976. Ore reserves for both the pit and underground mine were estimated at 5,100,000 tons grading 7.19% zinc, 0.58% copper, 0.74% lead and 2.77 oz. silver per ton.

Development of the mine at Lyon Lake near Sturgeon Lake, Ontario (100% owned by Mattagami) was suspended until the return of more favourable economic conditions. Geological ore reserves remain unchanged at 4,030,000 tons at an average grade of 6.66% zinc, 1.15% copper, 0.63% lead and 3.39 oz. silver per ton.

Mattagami Refining Inc., formerly Canadian Electrolytic Zinc, at Valleyfield, Quebec (51.67% owned by Mattagami) operated at 69% of capacity during the year due to poor market conditions. There remained a substantial inventory of both metal and concentrates at year-end. The plant of St. Lawrence Fertilizer, leased to Mattagami Refining Inc., remained closed during the year.

**UNITED STATES****McDermitt Mine (51% interest)**

Earnings from the McDermitt Mine in northwestern Nevada increased, although the large inventories of mercury in government and industrial accounts, and continued imports from foreign producers, dampened the improvement. Placer's 51% share of the joint venture's production was 15,350 flasks, comprising 13,920 flasks of Prime Virgin Mercury and 1,430 flasks of secondary mercury generated from industrial scrap.

**McDermitt**Years ended December 31,  
1977 1976**FINANCIAL**

Company's share of earnings	\$ 601,000	\$ 303,000
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**OPERATIONS**

Concentrator feed — tons	211,300	102,700
Grade — lbs./ton	11.7	18.0
Recovery of mercury — %	83.0	87.6

Concentrate produced — tons	1,398	900
Mercury produced — lbs.	2,289,400	1,728,700
Mercury shipped — lbs.	2,155,200	1,392,900

tons = short dry tons

Expansion of the open pit into lower grade areas accounted for a decline in average grade of concentrator feed.

Monitoring of the workplace atmosphere has shown that strictly applied safety and housekeeping programmes are effective in their control of mercury levels in the plant. The health of employees is monitored regularly and no symptoms of mercurialism have been detected.

Estimated mineable reserves at year-end were 2,663,000 tons at an average grade of 10 pounds of mercury per ton.

**PHILIPPINES****Marcopper Mining Corporation (39.89% interest)**

Mill throughput was higher than in any previous year although total production of copper was slightly below last year's record figure as a result of a lower average grade of ore and reduced output from leaching. Mining operations in the Tapani pit reduced geological reserves in that zone to 75,000,000 tons with an average grade of 0.58% copper at a cut-off grade of 0.4% copper.



Development of the nearby San Antonio ore zone was commenced. Estimated geological reserves at a cut-off grade of 0.4% copper are in excess of 200,000,000 tons at an average grade of 0.57% copper. Two pneumatic dredges are being assembled on site to remove the old tailing overburden. A new dam is being constructed to provide an adequate water supply for dredging and subsequently, for milling operations. Dredging is expected to be completed by the end of 1980 and mining will commence early the following year.

Marcopper has made a first payment of U.S. \$405,000 towards its 5% interest in the Philippine Associated Smelting and Refining Corporation. The smelter project is a joint venture between the Philippine government, the Philippine copper mining industry, and foreign investors. Conceptual engineering has been completed for the proposed copper smelter and site studies are now under way.

Marcopper and B.C. Packers Ltd. jointly continue to evaluate the potential in the Philippines for buying and processing tuna for domestic and foreign markets.

#### Placer Exploration

Years ended December 31,  
1977 1976

#### FINANCIAL

Gross revenues .....	\$42,944,000	\$34,999,000
Income taxes .....	\$ (243,000)	\$ 444,000
Net earnings (loss)* .....	\$ (22,000)	\$ 1,170,000

\*Includes a foreign exchange loss of \$513,000 for 1977 and a gain of \$380,000 for 1976.

Tunisia. The worldwide economic recession may be expected to reduce sales as current orders are filled. Revenues of Associated Plywood Sales (100% interest) were \$8,083,000 (1976 — \$9,062,000) and reflected the weak local economy. Molybond Laboratories (100% interest) increased its sales of molybdenum-based lubricants to \$1,555,000 (1976 — \$1,213,000) and has introduced its line of products into British Columbia, Canada. Northern Cattle Company (50% interest) reported cattle numbers at 79,000 (1976 — 79,500) although weather conditions on most of the properties were poor. Sheep increased from 31,500 in 1976 to 37,300 in 1977. Sales rose to \$1,716,000 (1976 — \$1,506,000).

#### Marcopper

Years ended December 31,  
1977 1976

#### FINANCIAL

Gross revenues .....	\$52,878,000	\$49,975,000
Income taxes .....	\$ 5,080,000	\$ 5,571,000
Net earnings .....	\$ 6,542,000	\$ 5,873,000
Dividends paid .....	\$11,298,000	\$12,763,000

#### OPERATIONS

Ore milled — tons .....	10,071,500	9,744,100
Daily average — tons .....	27,600	26,700
Grade — % copper .....	0.56	0.59
Recovery of copper		
— % .....	88.8	87.5
Concentrate produced		
— tons .....	187,600	191,300
Leach concentrate		
produced — tons .....	2,700	3,400
Copper in concentrate		
— lbs. .....	104,138,400	104,795,100
Gold in concentrate — oz. ...	45,000	39,500
Silver in concentrate — oz. ...	240,600	232,200
Copper concentrate		
shipped — tons .....	187,800	184,100
Inventory at year-end		
— tons .....	19,800	17,300

tons = short dry tons  
oz. = troy ounces

## AUSTRALIA

### Placer Exploration Limited (100% interest)

A small loss was experienced in Placer Exploration's overall operations although sales by subsidiary and associated companies continued at satisfactory levels. The Australian economy showed only marginal improvement during the year.

Fox Manufacturing Company (100% interest) experienced record sales of \$32,969,000 (1976 — \$24,807,000), primarily because of its role as a major supplier of conveyor systems to large projects in New Zealand, Mexico and



# The Mine Development Process — Operation

From the time of Malthus to the more recent pronouncements of the Club of Rome, warnings of impending shortages have seemed to arrive at regular intervals.

Perhaps such predictions will one day come true, although for the most part, those who made their plans on the basis of this kind of bad news have been disappointed. Soon after the invention of the automobile, predictions of gasoline shortages were heard, yet new petroleum reserves were always found. Improved technology brought discoveries at deeper horizons or in more remote locations. Now we find oil under turbulent seas and Arctic wastes.

Metals are, from time to time, the subject of similar concern as their earthly counterparts. Here, too, however, we find that a new invention or the application of new knowledge can

convert rock of little or no value into ore that can be mined economically.

Among the concepts which have helped us to increase our stocks of metal resources is one not often recognized or credited. It is organization. By breaking the mining process into its various logical parts, and applying a high degree of specialization to each; by imposing discipline on the use of such scarce assets as talent, time and money, a mine can achieve a level of efficiency which translates formerly uneconomic or marginal resources into viable industry.

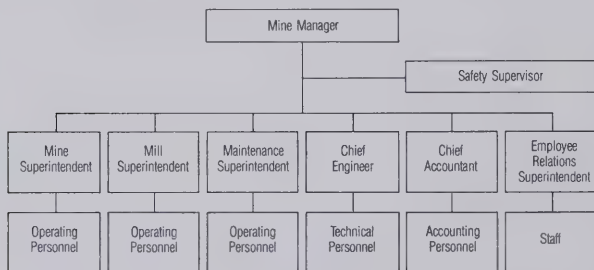
Following is the fifth essay on the Mine Development Process. It describes the operation of a modern mine and follows other essays which dealt with an overview of the industry; administration, exploration, and construction.





## The Mine Development Process — Operation

A simplified organization chart for a base metal mine operated by Placer in British Columbia would be along the following lines. Specific functions are organized separately and each reports to the mine manager.



These functions can be divided into two groups: the mine and mill are operating departments whose main objective is production; the service departments support them.

### PRODUCTION DEPARTMENTS

#### Mine Development — Keeping Ahead of Ore Requirements

Planning and development work is necessary to ensure that ore can be extracted at a rate sufficient to meet the mill's requirements. In open pit mining, overlying soils and waste rock are removed to expose the ore. Underground development, with shafts, drifts, tunnels and other openings, is more complicated.

In many mines orebody preparation is an ongoing part of the total mining operation. For example, while ore is being mined from location A, the ore at location B is being prepared or developed for mining. At a later date location B becomes the production site for ore while development of future ore is underway at location C. The ideal situation is to have just the right amount of ore developed at any given time





to maintain the optimum production rate and maximum cash flow.

The term *surface mining* generally means all mines in which the mineral is extracted at the surface. It includes: *open pits*, the name usually given to hardrock metalliferous mines (although *pit* is a term which may apply to any surface working); *strip mining*, the extraction of coal or a mineral which lies in uniform beds or seams and is extracted in a progression of long strips; *quarrying*, excavations for such non-metalliferous materials as limestone or granite.

### Open Pit — Where Big is Beautiful

Open pit mining operations do not vary much throughout the world, the major differences being in size or scale of operations which may range from a few hundred to many thousands of tons per day. Briefly, the method consists of removing the rock in horizontal slices or *benches*, starting in the most convenient part of the orebody and working outward to a predetermined perimeter. Benches vary in thickness from mine to mine, a common range being between 30-40 feet. As mining proceeds, pit walls assume a step-like appearance, with the benches contributing to wall stability.

Few orebodies are regular in shape or uniform in grade of material, and consequently some waste and low-grade material has to be mined with the ore. This material is deposited on dumps outside the pit perimeter, with low-grade ore separated so that it can be processed at a future date should the economics prove attractive.

Big equipment is the name of the game in modern surface mining. Many mineral zones have become mines only because huge trucks and shovels have made it economical to move large volumes of material. Now in use are electric shovels capable of loading 100-ton to 200-ton trucks within minutes. So great is the transmission torque required on these trucks that direct mechanical drive is not possible. Electric motors, powered by diesel motor generator sets which may exceed 2,000 horsepower capacity, have to be installed in the rear wheels.

Large, rotary drilling machines are capable of drilling over 3,000 feet per day of 12-inch diameter blast holes in hard rock. Rarely is the old type of dynamite used any more. Instead, the most common explosive is ANFO, a term derived from the ingredients of fertilizer-grade ammonium nitrate (A.N.) mixed with fuel oil (F.O.). It is granular in form and is loaded into the blast holes from dispensing trucks. Single blasts producing in excess of half a million tons of loose ore and waste are not unusual.

But gigantic equipment by itself is not the answer to developing large-scale, low-grade open pit mines. In times when mineral prices are low, yet operating costs continue to rise, the margin between profit and loss tends to become more narrow. Skillful planning and organization are ingredients which can make a significant difference.

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*This is the fifth essay in a series on the Mine Development Process. Reprints of the previous articles are available on request. Please contact: Corporate Communications, Placer Development Limited, 700-1030 West Georgia Street, Vancouver, B.C. V6E 3A8.*



### Underground Mining — Prehistory to the Present

Unlike surface mining, the techniques of underground extraction are many and varied, reflecting the fact that most of man's mining activity — and he has been extracting minerals from the earth since the dawn of history — has been of the underground variety.

Apart from economics, probably the two most important considerations in choosing the mining method are the structure of the orebody and the competency, or strength, of the rock. Ore structures are infinitely variable, ranging from narrow *veins* or *lodes* to huge masses or blocks of more-or-less uniformly disseminated mineral. The competency of the rock also varies enormously (often within an orebody), from completely unstable — as with loose sands — to very strong — as is often the case with limestones or granite.

Some rock structures have inherent stresses which tend to release around any artificial opening, causing what are known as *rockbursts*, a suitably descriptive phrase. This is particularly noticeable at great depths and in such mines it is necessary to follow strict extraction and safety procedures.

Some underground mining methods utilize natural instability to mine the ore. These *caving* methods are usually practiced under controlled conditions in large, disseminated orebodies where high rates of extraction can be maintained. They often allow mining of lower-grade ores at lower costs.

In narrow vein types of hardrock mining, *cut-and-fill* methods are common. Here the ore is removed in successive cuts or slices within established boundaries called *stopes*. The resulting void is filled with waste material which both supports the sides of the stope and provides a working floor for the next cut.

Flat, tabular-shaped orebodies would most likely be mined by a *room-and-pillar* system where the ore is extracted from the room and sufficient support is left in the form of pillars.







The pillars may be removed later in a controlled manner.

Although hardrock mining still uses the time-proven method of drilling and blasting to break up rock, this picture is changing a little with the advent of hydraulic rock breakers and large, full-face, boring machines capable of driving tunnels and shafts of up to 20 feet in diameter in hard rock. Hydraulic systems where water under high pressure is used to fracture and transport the mineral are also used, notably in coal operations.

Throughout modern underground mining, human muscle power has been superseded by machines. Large *jumbos* drill a number of blastholes simultaneously. Broken rock is moved by diesel-powered, load-haul-dump machines capable of handling 15 tons at a time. Rail haulage systems, built to railroad standards, transport broken ore over long distances, often under remote control. High-capacity shaft hoisting equipment has been developed that will lift thousands of tons per day from depths of over a mile below the surface. Concrete, often sprayed in place, is in many cases replacing the traditional timber for support purposes, and the science of rock mechanics is playing an increasingly important role in the design and support of underground openings.

Despite these innovations there are still many underground jobs that can only be done by experienced men whose skills will be required no matter how much the technology changes.

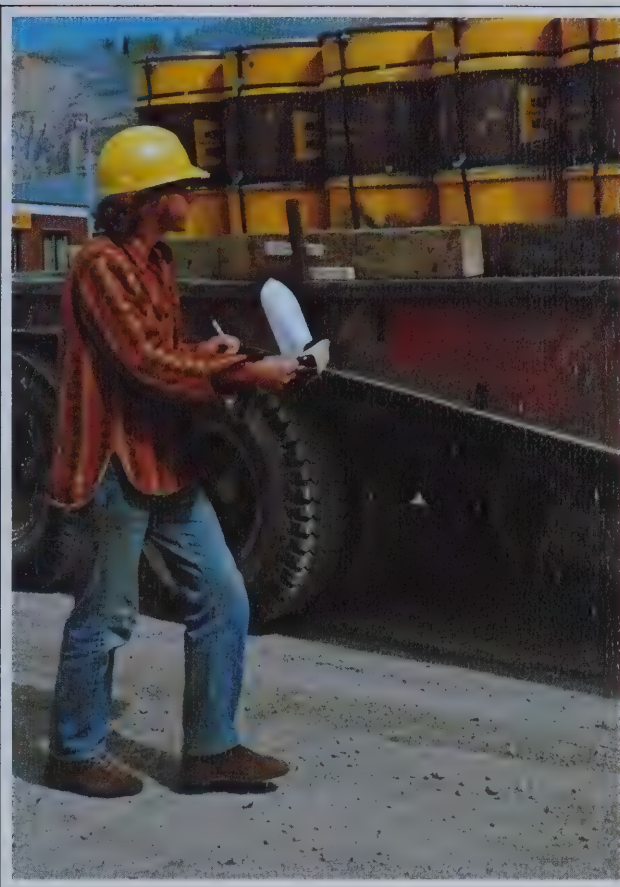
## Milling

Mineral processing, or *milling*, is the necessary first stage in the treatment of ores to produce a marketable commodity. It is usually carried out near the mine in buildings called the mill, or concentrator. The objectives of the milling department are to extract and concentrate the useful minerals, at a given cost and with minimum loss, into a form which may be sold for use as is or for smelting and refining.

The milling process starts with *comminution*, that is the crushing, then grinding, of the ore to a size from which the mineral particles can be liberated (generally the smaller the mineral particles the longer the grinding time and the greater the consumption of power). In the crushing stage, ore from the mine is reduced to pebble-size material by means of large crushers, some of which are capable of handling thousands of tons per hour.

The crushed material is then fed into grinding mills which are large, rotating drums containing tumbling steel balls or rods. These further reduce the pebble-size particles of ore to a sand-like fineness suitable for mineral separation. *Autogenous* grinding is used with ores which do not require the tumbling action of steel rods or balls; the grinding action is provided by the ore itself.

The next stage is removal of the useful mineral particles from the ground pulp or slurry by flotation. Chemicals, or *reagents*, that adhere to the mineral but not the rock particles are added to the pulp. Air bubbles forced through the pulp, rise to the surface as a mineral-rich froth which is collected and filtered. The product, now a *mineral concentrate*, is then dried in preparation for shipping. This process increases the concentration of the mineral many times, and is also an efficient way to separate different minerals in the same ore.



The waste slurry, or *tailing*, is usually deposited in special impoundments or tailing ponds, on the mine property. In some underground operations it is used for filling mined out areas.

There are many other types of processing specifically adapted to a particular mineral and the product required. The treatment of iron ores, coal, potash and uranium, to name a few examples, all require different technologies.

The efficient operation of a mill calls for special knowledge in the physical sciences and the application of certain principles by a resourceful staff. The head of the department must be technically expert in the fields of engineering, chemistry, physics and economics, in addition to being able to administer a staff of process operators, metallurgists, assayers, research personnel and, often, a maintenance crew. Mineral lost in the tailing may never be recovered again and therefore, continuous process control is of the utmost importance.

## SERVICE DEPARTMENTS

### Plant Maintenance

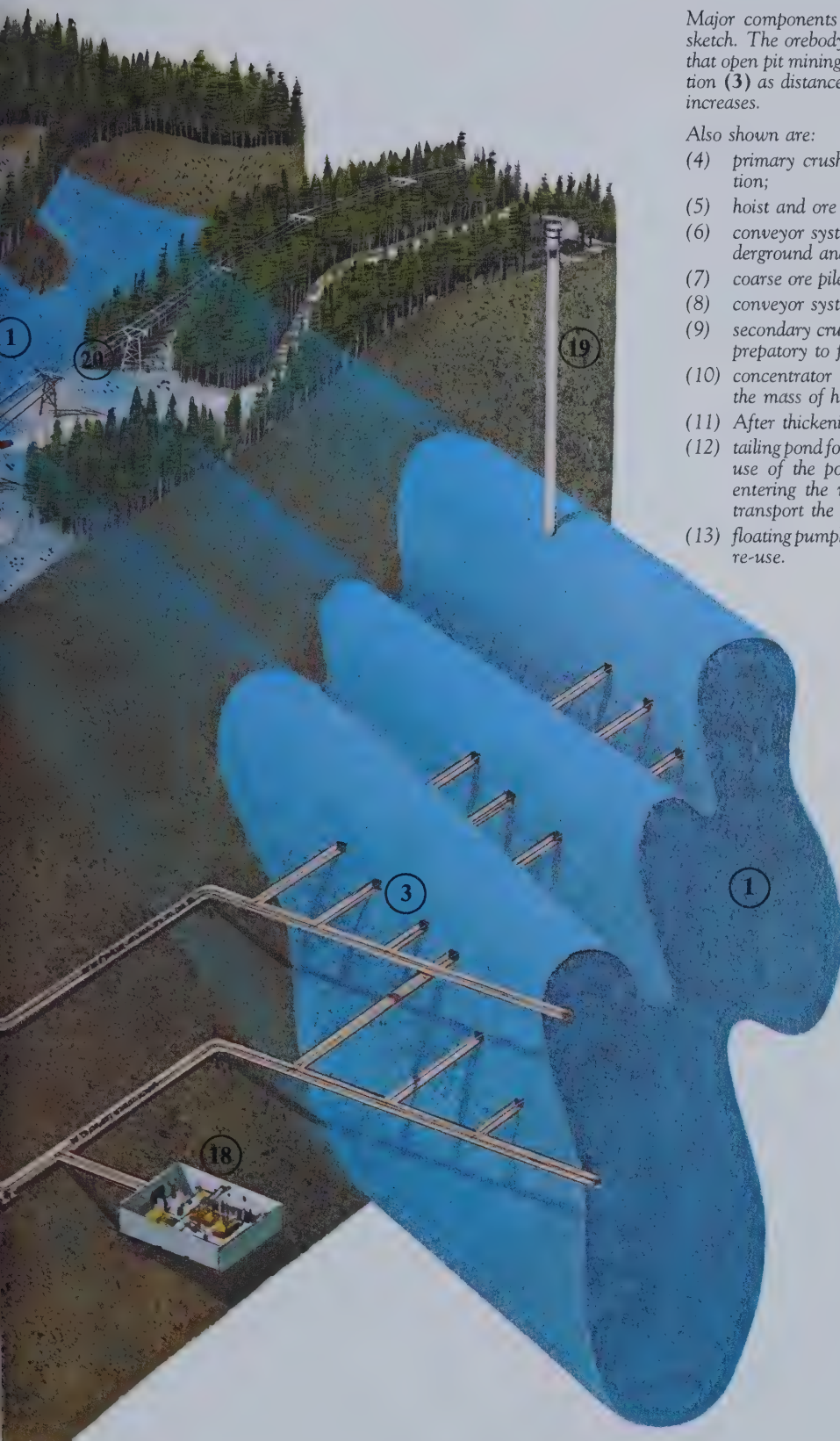
So complex has mining become that the bulk of its workforce today is probably not composed of either miners or metallurgists, but skilled technicians who keep the machinery and equipment operating.

Much maintenance work is of a preventive nature and, in









Major components of an operating mine are shown in this sketch. The orebody (1) is steeply dipping from left to right so that open pit mining (2) must give way to underground extraction (3) as distance of the mineralized areas from the surface increases.

Also shown are:

- (4) primary crushers for surface and underground production;
- (5) hoist and ore skip feeding onto
- (6) conveyor systems for transport of crushed ore from underground and open pit to
- (7) coarse ore pile. From here, ore is drawn as needed into
- (8) conveyor system feeding
- (9) secondary crusher. Here the ore is reduced to pebble size preparatory to final grinding in the
- (10) concentrator which separates the mineral fraction from the mass of host rock now known as tailing.
- (11) After thickening the tailing is pumped to the
- (12) tailing pond for permanent impoundment. One significant use of the pond is to prevent sand-like material from entering the regional streams or lakes. Water used to transport the tailing is decanted by a
- (13) floating pump house and is returned to the concentrator for re-use.

Other features of the illustration are:

- (14) maintenance shop for open pit equipment,
- (15) office,
- (16) warehouse,
- (17) headframe,
- (18) maintenance shop for underground equipment,
- (19) ventilation shaft,
- (20) power line,
- (21) mineral concentrate leaving mine in specially constructed truck trailers.



addition to the need for skilled tradesmen such as electricians, mechanics and millwrights, experienced planning personnel are required to ensure the correct scheduling of maintenance work and the availability of spare parts for all major repairs.

### Engineering

Traditionally, the engineering department provides technical expertise in such areas as: production planning, financial estimates and geological information. New tools and technologies have been adopted by the engineers as rapidly as they were introduced. For instance, computers are regularly used to predict cash flows over the life of the mine, giving a variety of possible pit designs. Changing market and economic conditions make the computer essential in adjusting forecasts of equipment needs or estimates of ore reserves.

### Employee Relations

The increasing complexity of union contracts, labour laws and statistical data required by governments emphasizes the importance of a department specializing in personnel administration. Routine data for both employee benefit programmes and government records is handled, but additional responsibilities may also include safety, recruiting, labour negotiation, labour disputes and training.

### Accounting

Accurate, up-to-date information is a necessity for the efficient operation of any mine. One of the main functions of an accounting department is to accumulate current cost statistics both for comparison with the figures budgeted and as a

guide to the current profitability of the mine. Special cost code systems are required to ensure the accuracy of the statistics, and nowadays much of the data is processed by computer. Payroll administration, payment of accounts and warehouse services are other important functions that usually come under the accounting department, in addition to the processing of large amounts of information required by government agencies.

### Mining and the Environment

The time when mining concerned itself only with the extraction of minerals has long gone. Ultimately, mines, like all industry, must fill a need for, and earn the approval of the general public if they are to have a future. This is why the design of a mine today includes systems to protect the environment and to restore disturbed surfaces after mining has ceased.

### In Conclusion

It is, perhaps, ironic that a miner is continually working himself out of a job. Every ton produced from a finite orebody means a ton less to mine in the future. In order to survive, therefore, a mining company has to direct money back into the search for new ore deposits, as well as pay taxes and make a reasonable return on its investment.

In the final analysis the success of a mining operation is not just due to the richness of the ore or to a favourable location. It is more a matter of know-how, hard work and team spirit welded together and made to work by organization. These attributes and skills have established Canada, and its miners, in the forefront of the world mining scene.





## Consolidated Statement of Earnings and Earnings Reinvested in the Business

	Years ended December 31,	
	1977	1976
	(in thousands)	
REVENUES:		
Sales .....	\$177,100	\$114,875
Interest and other income .....	<u>7,691</u>	<u>6,073</u>
	<u>184,791</u>	<u>120,948</u>
EXPENSES:		
Cost of sales .....	112,746	81,053
Depreciation .....	9,511	8,252
Depletion .....	4,737	1,125
Selling, general and administrative .....	11,315	8,876
Interest and exchange loss (Note 7) .....	6,533	—
Exploration .....	<u>9,916</u>	<u>6,436</u>
	<u>154,758</u>	<u>105,742</u>
Earnings before taxes and other items .....	30,033	15,206
INCOME AND RESOURCE TAXES (Note 6):		
Current .....	13,254	6,953
Deferred .....	<u>2,306</u>	<u>1,116</u>
	<u>15,560</u>	<u>8,069</u>
Earnings before the following .....	14,473	7,137
Equity in after-tax earnings of associated companies (Note 3) .....	6,240	11,088
Minority interests in losses (earnings) of subsidiaries .....	<u>40</u>	<u>(265)</u>
NET EARNINGS — \$1.72 per share (1976 — \$1.49) .....	20,753	17,960
Earnings reinvested in the business, beginning of year .....	192,515	184,195
Dividends — \$0.80 per share (1976 — \$0.80) .....	<u>(9,661)</u>	<u>(9,640)</u>
EARNINGS REINVESTED IN THE BUSINESS, END OF YEAR .....	<u>\$203,607</u>	<u>\$192,515</u>



## Consolidated Balance Sheet

	December 31,	
	1977	1976
	(in thousands)	
<b>ASSETS</b>		
<b>CURRENT ASSETS:</b>		
Cash and time deposits .....	\$ 27,594	\$ 34,256
Marketable securities, at cost which		
approximates market value .....	8,123	8,648
Accounts receivable .....	35,060	21,629
Receivables from associated companies .....	6,986	3,915
Inventories (Note 4) .....	<u>33,291</u>	<u>35,215</u>
	111,054	103,663
<b>INVESTMENTS AND RECEIVABLES:</b>		
Associated companies (Note 3) .....	62,214	64,914
Other, at cost .....	<u>4,707</u>	<u>5,879</u>
	66,921	70,793
<b>PROPERTY, PLANT AND EQUIPMENT:</b>		
Buildings and equipment (Note 5) .....	80,840	79,132
Properties and development, at cost		
less accumulated depletion of \$10,504,000		
(1976 — \$5,843,000) .....	<u>74,554</u>	<u>17,705</u>
	<u>155,394</u>	<u>96,837</u>
	<u>\$333,369</u>	<u>\$271,293</u>



## Placer Development Limited

December 31,  
1977                      1976

(in thousands)

### LIABILITIES AND SHAREHOLDERS' EQUITY

#### CURRENT LIABILITIES:

Accounts payable and accrued liabilities .....	\$ 26,792	\$ 23,555
Income and resource taxes payable .....	10,719	7,899
Long-term debt due within one year .....	3,709	—
	<u>41,220</u>	<u>31,454</u>

LONG-TERM DEBT (Note 7) ..... 36,511                      —

DEFERRED INCOME AND RESOURCE TAXES ..... 15,782                      9,867

MINORITY INTERESTS IN SUBSIDIARIES ..... 18,321                      19,965

#### SHAREHOLDERS' EQUITY:

Share capital (Note 8) —

Authorized, 20,000,000 common shares  
without nominal or par value

Issued, 12,098,620 shares (1976 — 12,076,282)

less 12,278 held by a subsidiary ..... 9,155                      8,719

Contributed surplus ..... 8,773                      8,773

Earnings reinvested in the business ..... 203,607                      192,515

221,535                      210,007

\$333,369                      \$271,293

#### APPROVED BY THE BOARD:

R. G. Duthie, Director

T. H. McClelland, Director



## Consolidated Statement of Changes in Financial Position

	Years ended December 31,	
	1977	1976
	(in thousands)	
FINANCIAL RESOURCES WERE PROVIDED BY:		
Net earnings .....	\$ 20,753	\$ 17,960
Add (deduct) items not involving working capital —		
Depreciation and depletion .....	14,248	9,377
Unproductive oil and gas properties expensed .....	1,647	—
Deferred income and resource taxes .....	2,306	1,116
Minority interests in (losses) earnings of subsidiaries .....	(40)	265
Total from operations .....	38,914	28,718
Long-term debt .....	36,511	—
Dividends received from associated companies in excess of equity in after-tax earnings (Note 3) .....	2,613	1,492
Shares issued .....	436	570
Disposal of property, plant and equipment .....	886	583
Other .....	489	(739)
	<u>79,849</u>	<u>30,624</u>
FINANCIAL RESOURCES WERE USED FOR:		
Purchase of Canadian Export Gas & Oil Ltd. (net of working capital of \$4,041,000) (Note 2) .....	49,767	—
Dividends to —		
Shareholders of the Company .....	9,661	9,640
Minority interests in subsidiary .....	1,603	481
Recoverable royalties .....	(1,055)	2,658
Buildings and equipment .....	7,568	4,721
Properties and development .....	14,680	479
	<u>82,224</u>	<u>17,979</u>
Increase (decrease) in working capital .....	(2,375)	12,645
Working capital, beginning of year .....	72,209	59,564
Working capital, end of year .....	<u>\$ 69,834</u>	<u>\$ 72,209</u>
INCREASE (DECREASE) IN WORKING CAPITAL:		
Cash and time deposits .....	\$ (6,662)	\$ 7,273
Marketable securities .....	(525)	1,986
Accounts receivable .....	13,431	1,395
Receivables from associated companies .....	3,071	1,992
Inventories .....	(1,924)	8,082
Accounts payable and accrued liabilities .....	(3,237)	(7,221)
Income and resource taxes payable .....	(2,820)	(862)
Long-term debt due within one year .....	(3,709)	—
Increase (decrease) in working capital .....	<u>\$ (2,375)</u>	<u>\$ 12,645</u>



## Notes to Consolidated Financial Statements December 31, 1977 and 1976

### 1. Accounting policies:

#### *Consolidation*

The consolidated financial statements include the accounts of the Company and all of its subsidiary companies (owned more than 50%). In addition, the equity method of accounting is followed for investments in associated companies in which the Company owns from 20% to 50%. Under this method, the Company records in earnings its share of the after-tax earnings or losses of these companies, rather than dividends received. Withholding tax is provided on the undistributed earnings of foreign subsidiary and associated companies.

The excess of cost over the underlying equity in the net assets of these investments at the date of acquisition is being depleted on a unit of production basis or amortized on a straight-line basis over the estimated life of each respective property or twenty years, whichever is shorter.

#### *Foreign currency translations*

Accounts prepared in foreign currencies are translated into Canadian dollars. Current assets, other than inventories, current liabilities and long-term debt, are translated at year-end rates. Inventories, non-current assets, depreciation and depletion are translated at the rates applicable at the time of the relevant transactions. Revenues and expenses, other than depreciation and depletion, are at average rates of exchange for the year. Exchange adjustments are included in the determination of net earnings.

#### *Inventories*

Concentrate and finished and in-process industrial products are valued at the lower of cost and net realizable value; cost is determined on a first-in, first-out basis.

Supplies and raw materials are valued at the lower of cost and replacement cost; cost is determined principally on a moving-average basis.

#### *Depreciation and depletion*

Depreciation is provided on the estimated useful lives of the assets on the following bases:

- (a) buildings and machinery on a straight-line basis at the rate of 5% per annum,
- (b) mobile equipment on a diminishing-balance basis at rates of 15% to 36% per annum, and
- (c) oil and gas lease and well equipment, and gas plants on a unit of production basis.

Depletion of the cost of mining properties and development is provided on a straight-line basis over the estimated life of each respective mine or twenty years, whichever is shorter.

Depletion of the cost of producing oil and gas properties and development is provided, on an area basis, on the unit of production method based upon economically recoverable reserves.

#### *Exploration*

Current mineral exploration costs are charged against earnings for the year except that costs are capitalized as Properties and development if economically recoverable ore reserves have been determined.

Current oil and gas exploration costs are charged against earnings for the year except for lease acquisition costs and drilling costs which are initially capitalized as Properties and development. Such capitalized costs are also charged against earnings when an area is abandoned or when there is an impairment in value.

#### *Deferred income and resource taxes*

The Company records income and resource taxes on the tax allocation basis. Under this method, taxes are determined from accounting income not taxable income. Differences arise when some costs, principally depreciation and depletion, are reflected in different time periods for accounting purposes than for tax purposes. The tax effect of these timing differences is shown in the consolidated financial statements as Deferred income and resource taxes.

### 2. Acquisition:

During 1977, the Company acquired at a cost of \$53,808,000 all of the shares of Canadian Export Gas & Oil Ltd. (CEGO), a company which explores for and produces crude oil and natural gas. The acquisition has been accounted for by the purchase method and the financial statements of CEGO have been consolidated with those of the Company from January 1, 1977. A summary of the acquisition is as follows:

	<i>(in thousands)</i>
Working capital .....	\$ 4,041
Net book value of property, plant and equipment .....	20,342
Other items — net .....	(3,363)
Total book value of net assets .....	21,020
Excess consideration paid over book value of acquired net assets .....	32,788
Total cash consideration .....	<u>\$53,808</u>



The excess consideration paid over the underlying book value of acquired net assets of CEGO has been allocated first to the estimated proven productive oil and gas reserves (which are being depleted on a unit of production basis) and the balance of \$3,398,000 has been allocated to undeveloped properties (which is being amortized on a straight-line basis over twenty years).

If the above acquisition of CEGO had occurred on January 1, 1976, the Company's consolidated operating results for 1976 would have shown sales of \$125,504,000, net earnings of \$18,301,000 and earnings per share of \$1.52.

### 3. Associated companies:

The Company has significant investments in three companies which operate primarily in the mining industry —

Craigmont Mines Limited and Mattagami Lake Mines Limited (N.P.L.) in Canada and Marcopper Mining Corporation in the Philippines. Craigmont Mines Limited estimates that proven ore reserves are only sufficient to enable mining operations to continue into the first quarter of 1979.

In 1976, the Company qualified in respect of a Philippine Decree which provided for the reduction of Philippine withholding tax to 15% on dividends paid subsequent to January 1, 1974. Accordingly, equity in earnings of Marcopper in 1976 has been increased by \$3,040,000 to reflect a net refund of \$1,502,000 in respect of a tax reduction on cash dividends paid by Marcopper prior to December 31, 1975 and a credit adjustment of \$1,538,000 representing the reduction in withholding tax applicable to the Company's share of the undistributed earnings of Marcopper Mining Corporation at December 31, 1975.

	% Owner- ship	Quoted market price December 31, 1977	Underlying equity in net assets December 31, 1977      1976		Equity in after- tax earnings Years ended December 31, 1977      1976		Dividends received Years ended December 31, 1977      1976	
.....(in thousands) .....								
Craigmont Mines Limited .....	45	\$ 8,377	\$ 8,093	\$ 8,953	\$ 951	\$ 1,566	\$1,811	\$ 1,811
Marcopper Mining Corporation* .....	40	79,345	21,387	22,978	2,218	5,030	3,809	5,860
Mattagami Lake Mines Limited (N.P.L.) .....	27	35,023	29,219	29,413	3,039	3,888	3,233	3,592
Other .....	28-50	—	3,515	3,570	32	604	—	1,317
			<u>\$62,214**</u>	<u>\$64,914**</u>	<u>\$6,240</u>	<u>\$11,088</u>	<u>\$8,853</u>	<u>\$12,580</u>

\*Net of withholding tax.

\*\*Includes unamortized excess of cost over underlying equity in net assets of \$780,000 (1976 — \$965,000).

The quoted market price does not necessarily represent the value of these investments, which may be more or less than that indicated by market quotations.

Summarized below are the combined assets, liabilities and net earnings of all the associated companies:

	December 31, 1977      1976 (in thousands)	
Assets —		
Current assets .....	\$129,208	\$136,485
Investments and other assets .....	11,952	12,682
Property, plant and equipment — net .....	<u>167,856</u>	<u>162,690</u>
	<u>\$309,016</u>	<u>\$311,857</u>
Liabilities —		
Current liabilities .....	\$ 49,938	\$ 46,624
Long-term debt and deferred income taxes .....	31,014	24,420
Minority interests in subsidiaries ...	<u>19,673</u>	<u>22,404</u>
	<u>\$100,625</u>	<u>\$ 93,448</u>
Combined net earnings for the year ...	<u>\$ 20,588</u>	<u>\$ 25,699</u>

### 4. Inventories:

	December 31, 1977      1976 (in thousands)	
Mining —		
Concentrates .....	\$ 11,451	\$ 13,904
Operating supplies .....	<u>9,690</u>	<u>8,769</u>
	<u>21,141</u>	<u>22,673</u>
Industrial products —		
Finished and in-process .....	9,903	10,131
Raw materials and supplies .....	<u>2,247</u>	<u>2,411</u>
	<u>12,150</u>	<u>12,542</u>
	<u>\$ 33,291</u>	<u>\$ 35,215</u>



## 5. Buildings and equipment:

	December 31, 1977      1976 (in thousands)	
Cost —		
Buildings and machinery .....	\$100,037	\$ 97,057
Mobile equipment .....	31,747	29,887
Oil and gas lease and well equipment, and gas plants .....	11,163	1,823
Other .....	1,155	1,193
	<u>144,102</u>	<u>129,960</u>
Accumulated depreciation —		
Buildings and machinery .....	37,308	32,195
Mobile equipment .....	20,202	17,282
Oil and gas lease and well equipment, and gas plants .....	5,062	662
Other .....	690	689
	<u>63,262</u>	<u>50,828</u>
Net book value .....	<u>\$ 80,840</u>	<u>\$ 79,132</u>

## 6. Income and resource taxes:

Effective January 1, 1976, the Company's mining operations in British Columbia became subject to the provisions of the Mineral Resource Tax Act. Essentially, this Act removed the previously applicable provincial royalties and mining tax and replaced them with an increased tax on net mining income. During 1976, however, it was necessary to continue making mineral royalty payments, but these are recoverable as tax credits in future years to the extent of one-third of mineral resource taxes otherwise payable each year. The net amount of mineral royalties recoverable in future years is \$1,603,000 (1976 — \$2,658,000).

At December 31, 1977, earned depletion of \$14,000,000 (1976 — \$17,800,000) is available to reduce income taxes of a subsidiary in future years.

## 7. Long-term debt:

Long-term debt at December 31, 1977 consists of the following bank loans:

	(in thousands)
U.S. \$30,000,000 bearing interest at 1% above the London Interbank Offering Rate (averaged 7.7% for the period outstanding to December 31, 1977), maturing August 15, 1983 .....	\$32,832
Australian \$4,000,000 bearing interest at 13%, maturing December 31, 1981 .....	4,988
Other, bearing interest at ½% above Canadian bank prime rate, maturing during 1980 .....	2,400
	<u>40,220</u>
Less: Payments due within one year .....	<u>3,709</u>
	<u>\$36,511</u>

The scheduled repayment of the above loans, based on current rates of exchange, for each of the five years through 1982 is as follows: 1978 — \$3,709,000, 1979 — \$8,613,000, 1980 — \$8,613,000, 1981 — \$7,813,000, 1982 — \$6,566,000.

Interest expense in 1977 totalling \$6,533,000 includes an exchange loss of \$2,394,000. Interest expense on long-term debt in 1977, including an exchange loss thereon of \$997,000, was \$2,309,000.

## 8. Share capital:

### Share purchase plan

The Company has a share purchase plan for its employees under which the Company contributes one-third of the cost of shares issued to employees. During 1977, 22,338 shares were issued for \$436,000. (In 1976, 16,682 shares were issued for \$362,000.)

### Share option plan

The Company's share option plan provides options over a ten-year term which are exercisable at any time during the term of the options. The option prices are 110% of the market value of the common shares at the dates the options are granted.

In 1977, no options were granted or exercised. (In 1976, no options were granted and options for 10,500 shares were exercised for \$208,000.) At December 31, 1977, options for 63,600 shares were outstanding at prices ranging from \$17.12 to \$22.96 per share. There would be no material dilution of earnings per share if these outstanding options had been exercised during the year.

### Cancellation of exchangeable common shares

Effective February 15, 1977, the authorized and unissued 184,000 exchangeable common shares without nominal or par value were cancelled.

## 9. Pension plans:

The Company and its subsidiaries have contributory and non-contributory pension plans under which the total pension expense for 1977 was \$703,000 (1976 — \$426,000). The cost of pension benefits charged to earnings is based upon periodic actuarial computations which are obtained at least every two years. The current and past service benefits of these plans for services rendered to the balance sheet date are fully provided for, in accordance with the most recent actuarial reports and the estimated requirements for minor modifications to the plans since the report dates.

## 10. Remuneration of directors and senior officers:

Aggregate direct remuneration paid in 1977 by the Company and its subsidiaries to its directors and senior officers amounted to \$734,000 (1976 — \$750,000) of which \$65,000 (1976 — \$71,000) consisted of fees paid to directors.

## 11. Price and profit controls:

The Company and its Canadian subsidiary and associated companies are subject to, and believe they have complied with, the provisions of the Federal Government's anti-inflation programme which provides restraints on prices, profits, compensation and dividends.



## 12. Lines of business information:

The Company operates in three principal industries — mining in Canada, oil and gas in Canada, and manufacturing in Australia. The Company's principal base metal mining operations include the production and sale of molybdenic oxide and copper concentrates. The Company's oil and gas operations include the production and sale of crude oil, natural gas and natural gas liquids. The Company's manufacturing operations include the manufacture of mining and industrial equipment.

Operating profit shown opposite represents sales less operating expenses, excluding interest, exploration and general corporate expenses.

	Years ended December 31, 1977                  1976 (in thousands)	
SALES:		
Mining .....	\$119,780	\$ 77,592
Oil and gas .....	14,376	2,500
Manufacturing .....	33,048	24,393
Other industries .....	9,896	10,390
Total sales .....	<u>\$177,100</u>	<u>\$114,875</u>
OPERATING PROFIT:		
Mining .....	\$ 33,560	\$ 15,794
Oil and gas .....	6,915	1,339
Manufacturing .....	2,361	1,913
Other industries .....	303	513
Total operating profit .....	43,139	19,559
General corporate expenses .....	(4,348)	(3,990)
Interest expense .....	(6,533)	—
Exploration expense .....	(9,916)	(6,436)
Interest and other income .....	7,691	6,073
Earnings before taxes and other items .	<u>\$ 30,033</u>	<u>\$ 15,206</u>

## 13. Quarterly financial data (unaudited):

	1st	2nd	3rd	4th	Year Total
(in thousands, except per share amounts)					
1977					
Sales .....	\$48,772	\$33,912	\$49,658	\$44,758	\$177,100
Gross profit .....	15,458	8,421	12,564	13,663	50,106
Net earnings .....	7,369	3,742	4,518	5,124	20,753
Per share:					
Net earnings .....	0.61	0.31	0.37	0.43	1.72
Dividends .....	0.20	0.20	0.20	0.20	0.80
1976					
Sales .....	\$26,255	\$21,653	\$23,904	\$43,063	\$114,875
Gross profit .....	6,250	3,713	3,847	10,635	24,445
Net earnings .....	3,547	2,709	5,582	6,122	17,960
Per share:					
Net earnings .....	0.29	0.23	0.46	0.51	1.49
Dividends .....	0.20	0.20	0.20	0.20	0.80

## 14. The impact of inflation (unaudited):

The selling prices of the Company's base metal mining products are generally determined by reference to world commodity prices. In the past three years, the profit margin of the Company's molybdenum operation has increased because higher molybdenum prices have more than offset the increased cost of production. Also, the profit margins of its copper operations have decreased significantly because of lower copper prices and rising cost of production.

The current replacement values of the Company's productive capacity (generally property, plant and equipment) are much greater than the corresponding actual historical costs as a result of the impact of inflation over the length of time the assets have been in use. Similarly, depreciation expense and accumulated depreciation determined on a re-

placement cost basis are also significantly higher. The replacement values of inventories and cost of sales, excluding depreciation, are moderately higher than the related historical amounts because of the Company's rapid inventory turnover.

The Company's annual report on Form 10-K filed with the United States Securities and Exchange Commission contains certain specific information with respect to replacement cost of inventories and productive capacity and the approximate effect which replacement cost would have had on the computation of cost of sales and depreciation expense for the year. Shareholders may obtain a copy of the Company's Form 10-K without charge upon written request to the Secretary of the Company.



## 15. Subsequent event:

Subsequent to December 31, 1977, the Company has agreed to purchase at a total cost of U.S. \$10,000,000 all of the shares of two coal mining companies located in Kentucky, U.S.A. Current production is approximately 400,000 tons per year. Subject to closing, the acquisition will be accounted for by the purchase method.

## 16. Subsidiaries:

Subsidiaries of the Company at December 31, 1977 were as follows:

### *Active*

Canex Placer Limited  
Canadian Export Gas & Oil Inc.  
Canadian Export Gas & Oil (U.K.) Ltd.  
Cuisson Lake Mines Ltd.  
Fox Manufacturing Company (New Zealand) Limited  
Fraser Lake Development Ltd.  
Gibraltar Mines Limited  
Placer Amex Inc.  
Placer Austex Pty. Limited  
Placer CEGO Petroleum Limited\*  
Placer Exploration Limited  
Placer Holdings Pty. Limited  
Placer (P.N.G.) Pty. Limited  
Sociedad Placer Development y Compania Limitada

### *Inactive*

Amex Communications Inc.  
Beluga Coal Company  
Canadian Exploration Limited  
Canadian Export Gas & Oil Ltd.  
Canex Aerial Exploration Limited  
Fox Manufacturing Company (South Africa) Pty. Limited  
Minera Placer Argentina S.A.M.I.C.T.y F.  
Minera Placer S.A.  
Placer Development (U.K.) Limited  
Placer Internationaal, B.V.  
Placer Nominees Pty. Limited

\*Incorporated in 1977

## Auditors' Report

To the Shareholders of  
Placer Development Limited:

We have examined the consolidated balance sheet of Placer Development Limited as at December 31, 1977 and 1976 and the consolidated statements of earnings and earnings reinvested in the business and changes in financial position for the years then ended. Our examinations of the consolidated financial statements of Placer Development Limited and those subsidiaries and associated companies of which we are the auditors were made in accordance with generally accepted auditing standards and accordingly included such tests and other auditing procedures as we considered necessary in the circumstances. We have relied on the reports of the auditors who have examined the financial statements of other subsidiary and associated companies.

In our opinion these consolidated financial statements present fairly the financial position of the Company as at December 31, 1977 and 1976 and the results of its operations and the changes in its financial position for the years then ended in accordance with generally accepted accounting principles consistently applied.

PRICE WATERHOUSE & CO.  
Chartered Accountants

Vancouver, B.C.  
February 6, 1978



# Ten Year Summary

(in thousands, except number of shareholders and employees)

## Financial data

### Revenues:

Sales .....	\$177,100	114,875	110,386
Interest and other income .....	7,691	6,073	5,801
	<u>184,791</u>	<u>120,948</u>	<u>116,187</u>

### Expenses:

Cost of sales .....	112,746	81,053	78,460
Depreciation and depletion .....	14,248	9,377	9,307
Selling, general and administrative .....	11,315	8,876	9,419
Exploration .....	9,916	6,436	10,077
Interest .....	6,533	—	—

	<u>154,758</u>	<u>105,742</u>	<u>107,263</u>
Income and resource taxes .....	30,033	15,206	8,924
	<u>15,560</u>	<u>8,069</u>	<u>10,052</u>
Earnings (loss) before the following .....	14,473	7,137	(1,128)
Equity in after-tax earnings of associated companies .....	6,240	11,088	10,785
Minority interests in (earnings) losses of subsidiaries .....	40	(265)	111
Earnings before extraordinary items .....	<u>20,753</u>	<u>17,960</u>	<u>9,768</u>
Extraordinary items .....	—	—	6,517
Net earnings .....	<u>\$ 20,753</u>	<u>17,960</u>	<u>16,285</u>

## Operating data

Tons ore milled — Gibraltar .....	14,071	8,457	11,451
— Endako .....	10,014	9,392	9,418
	<u>24,085</u>	<u>17,849</u>	<u>20,869</u>

### Copper produced (lbs. contained)

Gibraltar .....	86,782	63,703	83,559
Placer's share of:			
Marcopper — 40% .....	41,655	41,918	30,645
Mattagami — 27% .....	7,095	8,570	7,940
Craigmont — 45% .....	21,380	21,656	24,315
	<u>156,912</u>	<u>135,847</u>	<u>146,459</u>

Molybdenum produced (lbs. contained) .....	15,223	15,076	15,100
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## Other data

Working capital .....	\$ 69,834	72,209	59,564
Working capital ratio .....	2.7:1	3.3:1	3.5:1
Total assets .....	\$333,369	271,293	253,420
Property additions .....	\$ 22,248	5,200	8,903
Average shares outstanding* .....	12,075	12,050	12,025
Number of shareholders .....	5,196	5,337	5,574

### Geographical distribution of ownership — %

— Canada .....	78.2	77.3	75.8
— Australasia .....	12.1	10.8	11.8
— U.S. & Other .....	9.7	11.9	12.4
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>

Number of employees .....	2,640	2,652	2,794
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## Per common share\*

Earnings before extraordinary items .....	\$ 1.72	1.49	0.81
Net earnings .....	\$ 1.72	1.49	1.35
Dividends paid .....	\$ 0.80	0.80	1.20
Price range on Toronto Stock Exchange — High .....	\$ 23¾	25½	22¼
— Low .....	\$ 17	14¾	13¾

\*Adjusted to reflect two-for-one stock split in May, 1973.



1974	1973	1972	1971	1970	1969	1968
96,900	130,968	56,062	23,112	33,362	40,427	33,812
8,661	5,961	2,829	2,474	3,084	1,810	1,219
<u>105,561</u>	<u>136,929</u>	<u>58,891</u>	<u>25,586</u>	<u>36,446</u>	<u>42,237</u>	<u>35,031</u>
52,809	49,015	28,825	11,470	14,161	17,906	18,545
8,272	9,994	8,625	4,423	3,975	3,582	4,275
4,833	5,492	4,252	2,346	2,918	2,677	2,445
10,780	5,956	6,233	4,377	5,539	6,290	5,268
—	3,400	3,235	104	199	261	249
<u>76,694</u>	<u>73,857</u>	<u>51,170</u>	<u>22,720</u>	<u>26,792</u>	<u>30,716</u>	<u>30,782</u>
28,867	63,072	7,721	2,866	9,654	11,521	4,249
13,933	10,110	1,608	2,850	7,088	5,332	434
14,934	52,962	6,113	16	2,566	6,189	3,815
29,634	21,415	9,057	7,079	9,196	5,565	3,597
(4,959)	(15,307)	(2,623)	—	—	—	—
39,609	59,070	12,547	7,095	11,762	11,754	7,412
3,534	12,742	4,102	—	—	—	1,059
<u>43,143</u>	<u>71,812</u>	<u>16,649</u>	<u>7,095</u>	<u>11,762</u>	<u>11,754</u>	<u>8,471</u>
13,397	15,082	11,243	—	—	—	—
7,508	8,446	6,382	9,051	10,118	9,628	6,597
<u>20,905</u>	<u>23,528</u>	<u>17,625</u>	<u>9,051</u>	<u>10,118</u>	<u>9,628</u>	<u>6,597</u>
90,247	121,801	82,049	—	—	—	—
41,321	36,666	39,110	38,609	30,232	6,251	—
8,220	8,140	4,356	3,484	3,407	3,496	3,070
22,466	16,699	21,858	17,835	15,213	15,396	14,764
<u>162,254</u>	<u>183,306</u>	<u>147,373</u>	<u>59,928</u>	<u>48,852</u>	<u>25,143</u>	<u>17,834</u>
12,050	11,878	9,237	14,388	18,240	18,805	12,082
59,224	49,098	27,043	17,209	17,318	24,078	20,253
5.9:1	4.4:1	2.4:1	2.2:1	4.6:1	4.3:1	6.8:1
241,341	208,109	186,784	166,310	110,247	105,166	95,104
13,694	7,367	19,009	51,806	14,106	3,996	2,746
12,019	12,015	11,963	11,960	11,960	11,873	11,868
5,778	5,720	5,170	5,800	6,500	4,910	5,280
74.3	73.3	70.0	66.0	61.8	61.2	57.6
11.3	12.6	13.3	13.6	15.7	16.4	18.3
14.4	14.1	16.7	20.4	22.5	22.4	24.1
<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
2,813	2,326	2,434	2,138	2,149	2,129	2,091
3.30	4.92	1.05	0.59	0.98	0.99	0.62
3.59	5.98	1.39	0.59	0.98	0.99	0.71
1.20	1.20	0.47	0.46	0.68	0.59	0.36
25½	32	23	19½	24½	23½	17½
13¼	20%	12½	8%	14½	16	12



## Operating Review 1977-1975

1977 — The Company's earnings are dependent primarily upon the price levels and sales volumes of molybdenum products and copper concentrate, two of its principal products. The increase in the price of molybdenum on international markets made the most significant contribution to the 16% improvement in earnings to \$20,753,000 from \$17,960,000. The Company also benefited from the premium on its U.S. dollar revenues. Earnings were adversely affected by the low price of copper which averaged U.S. \$0.59 per pound on the London Metal Exchange.

Compared to 1976, Endako's molybdenum sales increased 58% to \$77,718,000, of which 73% was attributable to higher prices and 27% to volume. Gibraltar's copper concentrate sales increased 48% to \$39,291,000, essentially due to a 19-week strike in 1976. Oil and gas sales included \$12,557,000 as a result of the acquisition of Canadian Export Gas & Oil Ltd. (CEGO) at a total cost of \$53,808,000. Cost of sales increases were primarily related to higher volumes of molybdenum, copper concentrate and manufactured products. Increases in other expenses primarily resulted from the acquisition of CEGO. Taxes increased 93% to \$15,560,000 because of higher earnings from molybdenum sales and the acquisition of CEGO. Placer's share in after-tax earnings of associated companies decreased \$4,848,000 or 44% due to a non-recurring credit of \$3,040,000 in 1976 and poor market conditions for copper and zinc. It is anticipated that Craigmont's operations, which in 1977 provided 4.6% of the Company's earnings, will continue on a diminishing basis only into the first quarter of 1979 due to exhaustion of its ore reserves.

1976 — The 84% improvement in earnings to \$17,960,000 compared to 1975 (before extraordinary items) was due primarily to the abolition of provincial mineral royalties, improved molybdenum sales, lower exploration expenses and a non-recurring credit. Lower earnings by Mattagami were an offsetting factor.

Endako's molybdenum sales improved 38% to \$49,065,000 which was attributable 47% to higher prices and 53% to volume. Although copper prices increased 13%, sales of copper concentrate decreased 33% to \$26,570,000 primarily as a result of a 24% reduction in production of Gibraltar caused by a 19-week strike of mine employees. Exploration activity was concentrated in fewer areas resulting in exploration expense which was \$3,600,000 lower than in 1975. Taxes declined with the abolition of the British Columbia Mineral Royalties Act effective January 1, 1976. The Company's share in after-tax earnings of associated companies reflected a non-recurring credit of \$3,040,000 resulting from a reduction from 35% to 15% in Philippine withholding tax on Marcopper dividends and 37% lower earnings from Mattagami primarily as a result of reduced zinc prices.

1975 — The substantial earnings decrease (before extraordinary items) of 75% compared to 1974 was primarily due to the significant decline in copper price. Consequently, the Company's earnings from Gibraltar declined by \$12,700,000 and its shares of earnings from Marcopper and Mattagami declined by \$15,800,000. The gain on the sale of Placer Prospecting (Australia) Pty. Limited resulted in higher extraordinary earnings. Revenues and expenses for 1975 were not truly comparable to those of 1974 due to the consolidation of Placer Exploration Limited in 1975 which contributed \$33,272,000 to sales, \$25,786,000 to cost of sales and \$1,077,000 to earnings before extraordinary items.

### COMPOSITION OF NET EARNINGS PER SHARE

Operation	Endako	Gibraltar	Craigmont	Mattagami	Marcopper	McDermitt	Placer CEGO	Placer Exploration	Other*	Total
1977	\$1.54	\$(0.01)	\$0.08	\$0.25	\$0.18	\$0.05	\$0.25	—	\$(0.62)	\$1.72
1976	\$0.71	\$0.06	\$0.13	\$0.32	\$0.42**	\$0.03	—	\$0.10	\$(0.28)	\$1.49

\*Primarily represents exploration, interest and other corporate expenses.

\*\*Includes a non-recurring credit of \$0.25 from a reduction in Philippine withholding tax on dividends.

### SHARE PRICE RANGE (TORONTO STOCK EXCHANGE)

	1st Quarter		2nd Quarter		3rd Quarter		4th Quarter		Year	
	High	Low	High	Low	High	Low	High	Low	High	Low
1977	\$23¾	\$18	\$22¾	\$17½	\$19¼	\$17½	\$23½	\$17	\$23¾	\$17
1976	\$24¾	\$19	\$24½	\$22	\$25½	\$21¾	\$21	\$14¾	\$25½	\$14¾



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# Placer Development Limited

## Placer Group Interests

### CANADA

Craigmont Mines Limited  
Endako Mines Division  
Gibraltar Mines Limited  
Mattagami Lake Mines Limited (N.P.L.)  
    Mattabi Mines Ltd.  
    Mattagami Refining Inc.  
Placer CEGO Petroleum Limited

### U.S.A.

Placer Amex Inc.  
    McDermitt Mine  
    Placer Coal Inc.

### AUSTRALIA

Placer Exploration Limited  
    Fox Manufacturing Company  
    Molybond Laboratories  
    Associated Plywood Sales  
    Northern Cattle Company Pty. Limited

### PHILIPPINES

Marcopper Mining Corporation

## Offices

### Head Office:

700 Burrard Building  
1030 West Georgia Street  
Vancouver, B.C., Canada V6E 3A8  
Tel: (604) 682-7082 Telex: 04-55181

### Sydney Office:

Gold Fields House  
Sydney 2001, N.S.W., Australia

## Auditors

Price Waterhouse & Co., Chartered Accountants  
Vancouver, Canada

## Stock Exchange Listings

Toronto Stock Exchange  
Vancouver Stock Exchange  
Montreal Stock Exchange  
Sydney Stock Exchange  
American Stock Exchange

## Bankers

Canadian Imperial Bank of Commerce  
The Bank of Nova Scotia  
Bank of New South Wales  
Bankers Trust Company  
Citibank, N.A.  
Brown Brothers Harriman & Co.  
Bank of America  
The Chase Manhattan Bank

## Transfer Agents and Registrars

National Trust Company, Limited  
    Vancouver and Calgary, Canada  
Canada Permanent Trust Company,  
    Toronto and Montreal, Canada  
Professional Share Registries  
    (N.S.W.) Pty. Limited, Sydney, Australia  
Registrar and Transfer Company  
    Jersey City, N.J., U.S.A.



